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THE REPORTING OF DISEASE—THE NEXT STEP IN LIFE CONSERVATION.¹

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The life-saving campaigns of the last few decades have borne fruit. The death rate has been lowered and the average span of life correspondingly lengthened. Deaths from certain causes, especially from typhoid fever, smallpox, the infectious diseases of childhood, and tuberculosis, have been reduced. The amount of sickness, on the other hand, has not been controlled to any appreciable degree. There is still too much sickness among us. Indeed, there are those who, with some authority, maintain that illness has actually increased in spite of all the saving in mortality. The next 20 years must, therefore, see our activities in health work directed especially to the control of disease. If we avail ourselves of our present knowledge of sanitary science, we can reduce the incidence of illness fully as much as we have already cut down our death rates.

Value of Sickness Registration.

The basis for any campaign against sickness must be an accurate knowledge of its prevalence. Just as the reduction of mortality is furthered by a complete registration of deaths and their causes, so our efforts to reduce the frequency of disease depend upon machinery for reporting the cases of sickness, their causes, and their duration, for each group in the community. For this purpose, it is not sufficient to know only, as we do now, the number who have died from any particular cause. We must henceforth place our emphasis upon the cases of sickness themselves. They are socially more important than deaths and our program must more and more prevent their occurrence and effect their control. The State must, therefore, in the first instance, see that all preventable diseases are recorded, that we may lay our foundation for efficient sanitary administration.

Health departments have long realized the importance of registering disease. At first they required the reporting of the plagues such

¹ Address presented to the meeting of the Association of Life Insurance Presidents, held in New York City, N. Y., June 5, 1914, and referred to the health committee of the association for further consideration.

as smallpox, yellow fever, cholera, etc. Later the list was extended to include the acute infections, especially those of childhood, like diphtheria, scarlet fever, and measles. With the development of the germ theory of disease, the reporting of tuberculosis was included, first on a voluntary, and later on a compulsory basis. Finally, in some of the more advanced States, certain noninfectious diseases, such as cancer, pellagra, and even a few of the occupational diseases, have been made reportable. At the present time nearly all States of the Union have laws requiring the reporting of one or more of the preventable diseases.

Present Status.

What, then, is the actual condition of disease registration in the States? A questionnaire sent in 1913 by the statistical bureau of the Metropolitan Life Insurance Co. to the State health officers made specific inquiry regarding disease registration. The replies received showed conclusively that this important phase of our health work was sorely neglected. While some of the communicable diseases, such as smallpox, scarlet fever, diphtheria, acute anterior poliomyelitis (infantile paralysis), and tuberculosis were required to be reported in the larger number of communities, the facilities for carrying out the provisions of the law were most unsatisfactory. The statement of one health officer is typical of many: "We do not have funds," he writes, "to properly enforce the reporting of diseases and hence make it a local matter. We expect to make tuberculosis and some others reportable as soon as we can get our State-wide vital statistics law into operation. Then we will have some means of checking delinquent doctors who neglect to report." Other States fare even worse.

In the inquiry referred to above, health officers were asked to indicate the diseases which involved special difficulties in registration. One health officer replied as follows: "We have not marked those which give special difficulty in securing complete reports, because we seldom get complete returns for any of them." Much the same story was obtained from a number of other health officers, but perhaps the most illuminating return was received from the health officer of one of the largest of the Eastern States, who replied that he was "experiencing more or less difficulty in obtaining complete returns of all the diseases at the present time."

Various explanations are, of course, offered. In some cases the fault is put directly upon the State for neglecting to provide adequate legislation. In others the lack of funds for the proper administration of the law is deplored, and in still other instances the fault is ascribed to the lack of cooperation from physicians who will not take the necessary pains to report their cases.

Whatever be the explanation, it is quite clear that at the present time no important aspect of our State health work shows up to such poor advantage as does the registration and control of the preventable diseases. We are here concerned with conditions which are responsible from year to year for large economic and social losses, and yet we have only the crudest machinery for checking them. Prof. Irving Fisher, of Yale, has estimated that about 3,000,000 people are seriously ill at any one time in the United States, of whom about a half are suffering from preventable causes. The economic losses from such illness he declares to be no less than \$500,000,000 annually in wages and an equal sum in doctors' fees, drugs, and other necessary medical accessories. These figures, he believes, are conservative; but it is obviously impossible to make any estimate which will approximate the truth in view of the total absence of reliable information. In fact, there are no records of illness in this country excepting the very fragmentary reports of a few States and some corporations. Whatever be the exact amount of loss sustained through sickness, effective registration will help materially to reduce it and will thus yield a big return to the communities on the relatively small investment required.

Effect Upon Public Welfare.

Permit me to show in some detail how an efficient system of reporting disease will affect the public welfare:

First. It will make possible the immediate and effective treatment of certain infectious diseases. In cases of tuberculosis, for example, an early report to the department of health puts at the disposal of the patient the entire battery of the hygienic resources of the community. In New York City, where, for years, facilities have been well developed, an early report of a tuberculosis case means that a nurse is at once sent to the home to inspect the premises and to give the necessary advice and instruction as to home care. She urges enrollment in a municipal clinic, and in many cases arranges to have the patient treated in a sanatorium or a day camp. It is altogether possible that the reduction in the amount of tuberculosis in New York City and other cities which have extensive anti-tuberculosis work has been largely effected through the enforced registration of this disease.

Let us take another instance, that of diphtheria, where success in the treatment depends so largely on an early and correct diagnosis. The registration of a suspected case enables the health authorities to make a culture which settles the diagnosis. In positive cases the information placed at the disposal of the physician in charge helps to make a cure almost certain. So, too, the early reporting of eye affections of the new born brings a nurse or medi-

cal inspector to the home, who sees that the required treatment is given. As a result, many children now grow up with normal vision whose lives would otherwise have been shrouded in blindness.

Second. The registration of the communicable diseases will enable health officers to discover foci of infection in time to prevent the further spread of such diseases. The early and complete reporting of cases of typhoid fever at once puts the efficient health officer on the track of the infection. It may be the sewerage system, or the water or milk supply, which is at the bottom of the trouble. In any event, the location and the sequence of the cases settles the question, and the epidemic may, in this way, be quickly prevented from spreading to other sections. Such was the case recently in New York City, where an infected milk supply gave rise to some 300 cases of typhoid fever. In this instance, if the department of health had waited until the first death had been reported, the epidemic would in all probability have spread to innumerable other homes and the death losses increased many fold.

Similarly, in the city of Buffalo, during 1912, an epidemic of infantile paralysis was checked without serious fatalities, as the result of early reporting. In this one instance, the combined forces of the local health department, the Rockefeller Institute for Medical Research, and the United States Public Health Service were brought into consultation by the reporting of the first few cases which indicated a widespread contagion. Rigid steps were at once taken to isolate every case. As a result of the work of these cooperating agencies, it was possible to give proper treatment to the 281 cases of the disease and to prevent its further spread among the foreign population, where it had had its widest development.

Third. The reporting of occupational diseases enables departments of health to supplement the efforts of bureaus of labor in following up cases to their sources. Thus, the compulsory reporting of a case of lead poisoning puts the authorities at once on the trail of carelessly kept factories where other workmen may be similarly exposed to possible poisoning. The health and labor officials can then bring to bear all their facilities for the instruction of employers and employees and also for the fulfilment of the various requirements of the law. The reporting of occupational diseases can be made to serve as a most excellent check on the efficiency of existing labor legislation. It is significant to observe at this point that as a result of the effort of the American Association for Labor Legislation, there are now 15 States which have upon their statute books a model bill for the reporting of occupational diseases. This is what one public-spirited organization accomplished.

Fourth. The thorough registration of certain diseases, such as pellagra and cancer, will throw much light upon the origin of these

obscure maladies. We have much to learn with regard to the frequency with which these diseases occur in the various social groups. There is already sufficient evidence at hand that their incidence varies considerably with race, sex, age, occupation, personal habits, and other conditions not as yet differentiated. Thus, a recent study of considerable merit, of cancer in Norway showed the very surprising fact that in that country cancer is more prevalent among men than among women, and that the commonest form of the disease is the affection of the stomach. In one large series of cases 65 per cent of the total were cancers of the stomach, a condition not previously noted in any other country. If these figures be verified, a careful research may lead to the discovery and elimination of the conditions which are responsible for the prevalence of this form of the disease. In like manner, there is evidence that cancer may result from certain occupations which involve the continuous irritation of the skin or other exposed parts of the body. Thus, there are the peculiar cancers of chimney sweeps, of X-ray workers, and of those engaged in the manufacture of arsenical products. The application of preventive measures to those trades should have a beneficial effect. Our advance in the control of cancer, therefore, depends in large measure upon the cooperation of the physician, the registrar, and the vital statistician.

Fifth. The registration of the preventable diseases is, furthermore, the chief test at our disposal for measuring the efficiency of community control over them. Millions of dollars are being expended annually in our campaigns to check their progress. There is, however, a considerable difference of opinion, even among experts, as to the best methods to pursue, and the several communities are applying their appropriations in different ways. Thus, in the treatment of tuberculosis the widest differences of opinion are to be noted. There are those who place considerable emphasis upon the value of sanatorium treatment, while others discount this method, indicating that our results will depend upon an entirely different line of attack. It is clearly an advantage for every group to know the results obtained through the application of their special methods. In this way, the recording of cases, together with a complete statement of the method employed, will ultimately decide the fate of such experiments as are now being made with visiting nursing, isolation of communicable diseases, and the disinfection of premises where such diseases have occurred, sanatorium treatment for incipient tuberculosis, and other plans still awaiting judgment.

In spite of the fine possibilities that the registration of morbidity promises, the actual conditions, as we have already pointed out, are far from satisfactory. Not one State in the entire country has made adequate provisions for this important branch of its health work, and

the largest number have just begun to make any advances in this field. In view of this situation, the Surgeon General of the Public Health Service and the State health officers, assembled in their annual conferences for the discussion of health matters, have during the last few years directed their attention to this problem. After a series of annual reports and resolutions, the standing committee on the subject formulated plans for appropriate legislation. The committee carefully examined the entire subject, and at the eleventh conference, held in Minneapolis on June 16, 1913, submitted, provisionally, a model bill. This, it was hoped, would bring about uniform and complete reporting of the preventable diseases in all of the States of the Union. The bill received the attention of the conference members, and, after a thorough analysis, was adopted unanimously and recommended for introduction into the various State legislatures.

Scope of Model Bill.

The following are a few of the attractive features of the proposed law:¹

I. The law definitely stipulates that the reporting and registering of the preventable diseases shall be one of the responsible functions of the State department of health and makes specific provision and appropriation for the technical administration of this work.

II. It specifies diseases and conditions which shall be reported in every State and includes:

- (a) The infectious diseases;
- (b) The occupational diseases and injuries;
- (c) The venereal diseases; and
- (d) Certain diseases of unknown origin, like pellagra and cancer.

III. A precise provision is made for supplementary information and a uniform report blank is stipulated. This will facilitate comparisons of the data obtained from the several States.

IV. The time within which the disease or injury must be reported is definitely stated, and the local machinery and routine for bringing the necessary information to the attention of the State departments is specified.

V. Adequate provisions are made for the instruction of physicians and midwives in the requirements of the law. Severe penalties are also provided which will more fully assure the enforcement of the measure.

The bill which I have just summarized gives the results of the continuous deliberations of a body of health specialists who are familiar at first hand with the various phases of the problem and know what they want. It is my purpose to interest your association

¹ The model law will be found in the Public Health Reports, June 27, 1913, p. 1323, and Reprint No. 133 from the Public Health Reports.

in the splendid opportunity for service that awaits it in taking up this measure with the same enthusiasm with which it furthered legislation for the registration of births and deaths.

Plan of Campaign.

The Association of Life Insurance Presidents can assist in having this measure placed upon the statute books of the States by cooperating with committees which will be appointed for the purpose by the American Medical Association and the American Public Health Association. It is suggested that the combined organizations endeavor to interest the American Bar Association, local medical societies, State and municipal chambers of commerce and boards of trade, editorial staffs of newspapers and magazines, and the general public. The life insurance companies especially have the facilities necessary to carry on this propaganda most effectively through their medical examiners and agency force. They can interest their policyholders through the distribution of special pamphlets and through lectures and correspondence. This will, of course, require considerable effort; and it is therefore suggested that the committees concentrate first upon some one or, at most, a few States which give most promise. Above all, the various committees should work entirely in harmony with the Surgeon General of the United States Public Health Service, who has directed the movement, for better registration from the very beginning, and should consult with him as to the point of attack.

It is particularly appropriate that the life insurance companies should be among the first to take a forward step in the solution of the problem for controlling the preventable diseases. They are most seriously affected through the occurrence of illness among their policyholders. Not only are the diseases to which we have referred the cause of a large part of the mortality for which claims are paid; but, perhaps equally important, they are the prime factors in bringing about those economic disturbances of the budgets of policyholders which so largely determine the cancellation of insurance. No one knows just how much of the lapse waste is due to sickness, but there must be a considerable amount of insurance canceled each year because of the effects of disability upon the family income. With the more complete control of morbidity which would follow upon the enactment of the measure suggested, our insurance business and hosts of other social activities would at once show healthy improvement.

The Metropolitan Life Insurance Co., because of its vital interest in the reduction of mortality and lapse losses, stands ready to take an active part in a movement of this kind. Indeed, it has already attempted, on its own account, to collect information on the occurrence

of epidemics and other unfavorable community conditions through its extensive field force. During the winter of 1912 the field staff was instructed to report the occurrence of epidemics of communicable disease and similar conditions to the statistical bureau of the company. As a result, the company has received notices of epidemics from many sections of the country. Superintendents have also advised the home office when the situation was under the control of the local authorities or the other agencies at work. We have been advised of defects in water supplies, the lack of adequate facilities for the disposal of sewage and other physical conditions which influence public health. The various conditions described by the late Dr. Messenger in his address before this association in June, 1911, were fully confirmed. It is but one step further to make such information the basis for the more complete cooperation of the life insurance companies with local and State health officers.

Need for Interstate Reporting.

In closing, permit me to direct your attention to one other important phase of our subject. We have to this point considered only the mechanism of reporting morbidity as a State function. It must be remembered, however, that the communicable diseases are unconventional enough to ignore any and all artificial State boundary lines. Typhoid fever, for instance, follows along the lines of water courses and many States thus receive infection from the same source. New York and other large communities have for years been the dumping ground for the tuberculous sick of near-by communities which have fewer facilities for treatment. Every railway is an avenue for the spread of infection. The New York City milk supply is brought from five adjacent States and in this way the germs of tuberculosis, typhoid fever, scarlet fever, and diphtheria are in many instances brought into the city. It is, therefore, not enough for a State health officer to know the incidences of the infectious diseases in his own State only. He must, in addition, have some effective arrangement with the authorities of neighboring States and particularly with some central interstate office to keep him fully informed as to the existence of epidemics in other parts of the country. Nothing short of a central governmental agency in constant communication with all sections can help solve the problem of controlling the communicable diseases.

With this in mind, the Surgeon General of the Public Health Service and the State health officers, assembled in their tenth annual conference in 1912, agreed upon a system of voluntary reports by which the Public Health Service would be informed by the State of the incidences of the more important infections. This plan is much restricted in scope and is valuable mainly as an index of what

could be done with better registration within the States. It will be difficult for the Surgeon General ever to report effectively on the prevalence of the preventable diseases until the individual States have at their disposal a sufficient amount of accurate and complete registry data. This can be made possible only by the passage and enforcement of the model bill.

A Registration Area for Sickness.

Let me, therefore, suggest that the health committee of this association take up this cause by resolution of this meeting in order to encourage at least a few States to perfect their registration of the preventable diseases. Ultimately, there should be an approved registration area for morbidity under the jurisdiction of the Surgeon General's office very much as the Census Bureau at the present time provides for the registration and statistical analysis of data on births and deaths. This much has already been accomplished by the Russian Government throughout the Empire. Our plan of campaign should aim for as much. Many practical difficulties will be encountered in the operation of this system, but our obvious duty is first to obtain an effective and uniform statute. The amount of effort required to bring about this desired condition will be small compared with the benefits which will ultimately accrue to the participating organizations.

SANITARY WORK IN VERA CRUZ

DURING THE FIRST THREE WEEKS OF THE AMERICAN OCCUPATION.

By G. M. GUITERAS, Surgeon, United States Public Health Service.

Sanitary Condition of Vera Cruz at the Time of the American Occupation.

Considering the fact that Vera Cruz is a tropical seaport town with a mixed Spanish and Indian population, its sanitary condition at the time of the American occupation was better than one might have expected. The streets were paved, many of them with asphalt, and kept fairly clean. The city was provided with good drainage and sewerage systems. The water supply is derived from springs at some distance from the city, and is of good quality, but unfortunately deficient in quantity. The storage capacity of the reservoir is also insufficient, and it is said that during the rainy season the water becomes very muddy.

The public markets were not clean, and a number of other public buildings were dirty and ill kept. The hospitals, of which there are three, were in poor condition; the lazaretto for the treatment of smallpox cases was in a lamentable state of ruin, and the patients